

### REMARKS

A review of the claims indicates that:

- A) Claims 8—25 are currently amended.
- B) Claims 1—7 and 26—40 are withdrawn.

In view of the following remarks, Applicant respectfully requests reconsideration of the rejected claims.

#### Traversal of the §102 Rejections regarding Mardilovich

Claims 8—16 were rejected under §102(e) as being anticipated by U.S. Patent Application 2004/0033403 A1, hereinafter “Mardilovich.” In response, the Applicant respectfully traverses the rejection.

The Applicant has amended Claim 8 to assume the precise scope of original Claim 13. Accordingly, the Applicant will address the rejections of Claim 8 and 13 together, as they apply to current Claim 8.

**Claim 8** recites a method, comprising:

- obtaining a **first current collector layer suitable for physically supporting parts of a fuel cell stack**, wherein the fuel cell stack includes at least two electrodes and an electrolyte layer;
- depositing a first electrode on the first current collector layer;
- depositing the electrolyte layer of the fuel cell stack on the first electrode layer;
- depositing a second electrode layer of the fuel cell stack on the electrolyte layer; and
- depositing a **second current collector layer of the fuel cell stack on the second electrode layer.**

1. Mardilovich discloses only one substrate and/or current collector, not two, as recited by the claim.

1        Claim 8 recites *first and second current collector layers*, i.e. two current  
2 collectors. The Applicant respectfully submits that the Mardilovich reference fails  
3 to disclose first and second current collectors (i.e. two collectors), as recited by  
4 Claim 8.

5        The Patent Office appears to draw an analogy between Mardilovich's  
6 substrate 50 and a current collector. Assuming (only for the moment) that this  
7 analogy is valid, the Applicant submits that Mardilovich discloses only a single  
8 substrate 50. In Mardilovich, the substrate 50 supports the anode 20, electrolyte  
9 40 and cathode 30, as seen, for example, in FIGs. B3 and 4B. However, these  
10 figures fail to disclose a fuel cell having first and second current collectors and/or  
11 substrates, as recited. In fact, Mardilovich discloses only one substrate/collector.  
12 Accordingly, the Applicant respectfully submits that Mardilovich does not  
13 disclose elements recited by the claim, and is deficient to support the Section 102  
14 rejection of Claim 8. The Applicant respectfully requests that the Section 102  
15 rejection be lifted.

16        2.     The "substrate" disclosed by Mardilovich is not a "current collector"

17        The Applicant respectfully submits that a substrate, as disclosed by  
18 Mardilovich, is not a current collector. Nothing in Mardilovich suggests that the  
19 substrate 50 is a current collector. In fact, Mardilovich refers to a current collector  
20 in several paragraphs, thereby suggesting that Mardilovich draws a distinction  
21 between the two terms, and does not consider the substrate 50 to be a current  
22 collector.

23        The Patent Office suggests that the anode, cathode and electrolyte are  
24 positioned on a current collector in FIG. 4B. In response, the Applicant submits  
25

1 that the Office has not made a sufficient showing that the disclosed substrate 50 is  
2 actually a current collector.

3 Mardilovich's use of materials to construct the substrate indicate that it is  
4 not a current collector. In particular, Mardilovich discloses that the substrate can  
5 be a number of materials, such as plastic (paragraph [0028], line 8), that would  
6 indicate that the substrate is not a current collector.

7 Mardilovich appears to teach the use of "terminal electrodes" to transmit  
8 current (see paragraph [0032]). In view of the "terminal electrodes," it would  
9 seem that the function of the current collector is not performed by the substrate.  
10 Accordingly, it would seem that the substrate 32 is not a current collector.

11 Without a further showing that Mardilovich intended the substrate 50 to be  
12 a current collector, the Applicant feels that it is reasonable to assume that  
13 Mardilovich considered these two different terms to indicate two different  
14 structures. For at least these reasons, the Applicant respectfully submits that  
15 Mardilovich's disclosed "substrate," and the "current collector" recited by the  
16 applicant's claim, do not refer to the same type of structure. Accordingly, the  
17 Applicant respectfully submits that Mardilovich does not disclose elements recited  
18 by the claim, and is deficient to support the Section 102 rejection of Claim 8. The  
19 Applicant respectfully requests that the Section 102 rejection be lifted.

20 **Claims 9—25** depend from Claim 8 and are allowable due to their  
21 dependence from an allowable base claim. These claims are also allowable for  
22 their own recited features that, in combination with those recited in Claim 8, are  
23 neither disclosed nor suggested in references of record, either singly or in  
24 combination with one another.

1        **Traversal of the §102 Rejections regarding Beatty**

2        Claims 8—16 were rejected under §102(e) as being anticipated by U.S.  
3        Patent No. 6,972,161 B2, hereinafter “Beatty.” In response, the Applicant  
4        respectfully traverses the rejection.

5        The Applicant has amended Claim 8 to assume the precise scope of original  
6        Claim 13. Accordingly, the Applicant will address the rejections of Claim 8 and  
7        13 together, as they apply to current Claim 8.

8  
9        **Claim 8** recites a method, comprising:

- 10        • obtaining a **first current collector layer suitable for physically**  
11        **supporting parts of a fuel cell stack**, wherein the fuel cell stack  
12        includes at least two electrodes and an electrolyte layer;  
13        • depositing a first electrode on the first current collector layer;  
14        • depositing the electrolyte layer of the fuel cell stack on the first  
15        electrode layer;  
16        • depositing a second electrode layer of the fuel cell stack on the  
17        electrolyte layer; and  
18        • depositing a second current collector layer of the fuel cell stack on  
19        the second electrode layer.

- 20        1.        Beatty does not disclose a current collector supporting a fuel cell  
21        stack. Instead, Beatty’s substrate 132 supports the stack.

22        The Applicant’s Claim 8 recites “a first current collector layer suitable for  
23        physically supporting parts of a fuel cell stack.” This is supported by all aspects of  
24        the specification (e.g. see, Title, *Current Collector Supported Fuel Cell*). The  
25        Applicant respectfully submits that the Beatty reference fails to disclose a current  
26        collector that supports a fuel cell stack, as recited by Claim 8. In fact, Beatty’s

1 fuel cell stack is supported by the substrate 132, not the current collectors 120,  
2 122.

3 The Beatty reference discloses a substrate 132 having permeable 134 and  
4 non-permeable regions 136 (e.g. FIG. 5). A fuel cell stack is supported by the  
5 substrate 132. The fuel cell stack includes a cathode 108, an anode 106 and an  
6 electrolyte 110. The fuel cell has first and second current collectors 120 and 122.  
7 The current collectors are thin (e.g. see FIG. 5) and the fuel cell is therefore  
8 supported by the substrate 132, which is strong (column 5, line 15) and 5 to 100  
9 times thicker than the cell stack (column 5, line 28). Accordingly, the fuel cell  
10 stack is supported by the substrate 132, not the current collectors 120, 122.

11 The Patent Office suggests that the current collector is 5 to 100 times  
12 thicker than the fuel cell stack components, thereby suggesting that the current  
13 collector supports the fuel cell stack. The Applicant respectfully disagrees.

14 Referring to the cited passage, column 5, lines 25—30, Beatty discloses  
15 that the substrate 132 is 5 to 100 times thicker than the fuel cell. The current  
16 collector is not disclosed to have this thickness. Beatty's figures depict two  
17 current collectors 120, 122 that are thin and inadequate to support the fuel cell  
18 stack. Thus, Beatty fails to disclose a current collector that is sufficient to  
19 physically support a fuel cell stack, as recited by Claim 8.

20 For at least these reasons, the Applicant respectfully submits that Beatty  
21 fails to show or disclose a current collector suitable for physically supporting parts  
22 of a fuel cell stack, as recited by Claim 8. Beatty clearly discloses that the fuel  
23 cell stack is supported by the substrate 132 (column 5, lines 25—26).  
24 Accordingly, the Applicant respectfully submits that Beatty does not disclose  
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1 elements recited by the claim, and is deficient to support the Section 102 rejection  
2 of Claim 8. The Applicant respectfully requests that the Section 102 rejection be  
3 lifted.

4 **Claims 9—25** depend from Claim 8 and are allowable due to their  
5 dependence from an allowable base claim. These claims are also allowable for  
6 their own recited features that, in combination with those recited in Claim 8, are  
7 neither disclosed nor suggested in references of record, either singly or in  
8 combination with one another.

9 **Claims 8—19**

10 Several claims have been amended. The Applicant provides the Patent  
11 Office with the below information, for the sake of convenience.

12 Claim 8 has been amended to assume the scope of original Claim 13.

13 Claim 9 recites material supported by the specification at page 12, lines 8—  
14 10, page 13, lines 15—20 and other locations.

15 Claim 10 recites material supported by the specification at page 12, lines  
16 25—30 and other locations.

17 Claim 11 recites material supported by the specification at page 10, lines  
18 3—13 and other locations.

19 Claim 12 recites material supported by the specification at page 10, lines  
20 19—28 and other locations.

21 Claim 13 recites material supported by the specification at page 14, lines  
22 14—23 and other locations.

23 Claim 14 recites material supported by the specification at page 15, lines  
24 1—6 and other locations.  
25

1 Claim 15 recites material supported by the specification at page 6, lines 3—  
2 11 and other locations.

3 Claim 16 recites material supported by the specification at page 10, lines  
4 3—13 and other locations.

5 Claim 17 recites material supported by the specification at page 12, line  
6 6—8, page 13, lines 18—20 and other locations.

7 Claim 18 recites material supported by the specification at page 13, lines  
8 15—18 and other locations.

9 Claim 19 recites material supported by the specification at page 16, lines  
10 15—18 and other locations.

11 **Conclusion**

12 The Applicant submits that all of the claims are in condition for allowance  
13 and respectfully requests that a Notice of Allowability be issued. If the Office's  
14 next anticipated action is not the issuance of a Notice of Allowability, the  
15 Applicant respectfully requests that the undersigned attorney be contacted for the  
16 purpose of scheduling an interview.

17 Respectfully Submitted,

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